

HELMINTHOLOGICAL ABSTRACTS

incorporating
BIBLIOGRAPHY OF HELMINTHOLOGY
For the Year 1936.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY
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IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY

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Abstracts in the present number are by :

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R. H. Hurst.	B. G. Peters.
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Vol. V, Part 2.

86—Agricultural Gazette of New South Wales.

a. HUNGERFORD, T. G., 1936.—“Worms in poultry.” **47** (4) 226.

(86a) Hungerford states categorically that the presence of *Heterakis gallinae* in chickens rarely causes any harm though other roundworms and cestodes may upset the health of the bird.

P.A.C.

87—Agriculture and Live-Stock in India.

a. BHALERAO, G. D., 1936.—“Worm diseases of poultry in India and their control.” **6** (1), 48-53.

(87a) Bhalerao considers the helminth parasites of domestic fowls in India and the symptoms to which they give rise. He discusses the treatment and preventive measures suitable for eliminating these diseases.

P.A.C.

88—Allahabad University Studies.

a. VERMA, S. C., 1936.—“Notes on trematode parasites of Indian birds. Part I.” **12** (12), 147-188.

(88a) Verma describes the following new trematodes from Indian birds: *Echinostoma bhattacharyai* n. sp., *E. crecci* n. sp., *E. minimus* n. sp., *E. longicirrus* n. sp., *Echinoparyphium recurvatum* var. *indiana* n. var., *E. splendens* n. sp., *E. gizzardai* n. sp., *Euparyphium longitestis* n. sp., *Microparyphium montei* n. sp., *Paryphostomum novum* n. sp., *P. pentalobum* n. sp., *Patagifer wesleyi* n. sp., *Mesorchis pennanti* n. sp., *Hypodaerium* [= *Hypoderæum*] *magnocirrusa* n. sp., *H. mainpuria* n. sp., *Chaunocephalus similiferox* n. sp., *Pseudoechinocasmus sativani* n. g., n. sp., *Dissurus farrukhabadi* n. g., n. sp., *Alaria robusta* n. sp., *Procrassiphiala titricum* n. g., n. sp., *P. cuckooai* n. sp., *Neodiplostomum globiferum* n. sp., *Pseudodiplostomum cochlearis* n. sp., *P. fraterni* n. sp., *Allodiplostomum hindustani* n. sp., *Proalaria grayi* n. sp., *Strigea elongata* var. *indica* n. var., *S. falconis* var. *eaglesa* n. var., *S. globocephalum* n. sp., *Apharyngostrigea egrettii* n. sp., *Cotylurus streptocorpus* n. sp., *Ophiosoma macrocephala* n. sp. and *Ridgeworthia ramai* n. g., n. sp.

E.M.S.

89—American Journal of Hygiene.

a. LEATHERS, W. S., KELLER, A. E. & WYMAN, B. F., 1936.—“A statewide investigation of hookworm in South Carolina.” **23** (3), 600-614.

90—Annales de Parasitologie Humaine et Comparée.

- a. HARENDRANATH RAY & MATIRANJAN DASGUPTA, 1936.—“*Microfilaria columbae* n. sp. du sang d'un pigeon indien: *Columba intermedia*.” 14 (3), 256-260.
- b. FUHRMANN, O., 1936.—“Un singulier tenia d'oiseau *Gynandrotaenia stammeri* n.g., n. sp.” 14 (3), 261-271.
- c. BABUDIERI, B., 1936.—“Remarques sur la biologie des acanthocéphales; double encystement des jeunes formes d'*Echinorhynchus*. (Note préliminaire.)” 14 (3), 298-301.
- d. DOLLFUS, R. P., 1936.—“Amoenitates helminthologicae. III. Le rejet du genre *Ostium* H. S. Pratt 1903.” 14 (3), 302.

(90b) Fuhrmann describes a very interesting new proterogynous cestode from the flamingo, *Gynandrotaenia stammeri* n. g., n. sp. It possesses a peculiar projection of the scolex bearing the retracted rostellum and termed the “proscolex,” and also a regular alternation throughout the strobila of male and female proglottids. All proterogynous forms are removed from the Acoleidae into a new family, the Progynotaenidae, containing Progynotaeninae n. subf. and *Gynandrotaeniae* n. subf. The family Acoleidae s. str. now contains the Acoleinae n. subf. and the Dioecocestinae n. subf.

E.M.S.

(90c) An example of the faculty of adaptability in Acanthocephalids which may, in the larval stage, parasitize a series of unrelated hosts is cited by Babudieri. A number of encysted larvae of (probably) *Echinorhynchus polyacanthus* Creplin were taken from under the peritoneum of a *Vipera ammodytes* from Dalmatia. From two out of three white rats, each fed with a single cyst, encysted forms, showing exactly the same characters as those from the reptile, were later recovered. The author thinks that re-encystment, such as he describes, can occur naturally and constitutes an important mechanism whereby the preservation of the species is assured, notwithstanding the destruction of the host.

J.N.O.

(90d) Dollfus states that the genera *Ostium* Pratt, 1903 and *Pneumonoces* Looss, 1902 cannot be considered as separate since the ascending, extra caecal uterine loops near the hind end of the body, which are characteristic of *Pneumonoces*, may also occur in *Ostium*; in fact, Pratt's original figure of the type, *O. formosum*, clearly shows the presence of such loops. Gogate's species, *Ostium mehrai*, disagrees in several respects with the characters of the genus *Ostium* (*Pneumonoces*) and Dollfus suggests it may belong to a new genus closely related to *Styphlodora*.

J.N.O.

91—Annals of Applied Biology.

- a. GOODEY, T., 1936.—“Some applied biological aspects of problems relating to plant-parasitic nematodes.” 23 (2), 203-230.
- (91a) Goodey discusses the scientific background of the study of plant-parasitic nematodes particularly in relation to human and veterinary helminthology, stressing the unity of the whole subject. Dealing with plant galls caused by nematodes, he suggests that galls are reaction products formed by the plant in response to irritant substances secreted by the parasite rather

than by mechanical injury of the tissues. In relation to *Anguillulina dipsaci* he discusses parasitism of bulbous irises, "tulip root" of oats and "stem sickness" of clover and in regard to the two latter deals with the question of the parasite being seed-borne and the rôle of weeds as reservoir hosts. Hot-water treatment of plants is passed under review and the results of some of the recent work in this field are dealt with. Problems relating to the control of *Heterodera marioni* in the field by chemicals and by the use of immune rotational crops are discussed. In regard to *Heterodera schachtii* its dispersal by means of dirty seed is touched on and its occurrence on the roots of certain wild hosts is reviewed in relation to the question of biological races. T.G.

92—Annals and Magazine of Natural History.

- a. BAYLIS, H. A., 1936.—"A new species of *Notocotylus* (Trematoda) from the water-rail." (Ser. 10), 17 (100), 474-477.
- b. BAYLIS, H. A., 1936.—"The nematode genus *Rondonia* Travassos." (Ser. 10), 17 (102), 606-610.

(92a) Baylis describes *Notocotylus ralli* n. sp., from *Rallus aquaticus* in Great Britain, having more numerous ventral glands than previous species.

B.G.P.

(92b) The genus *Rondonia* is in almost all respects a typical member of the family Atractidae, and as it differs from *Atractis* only in the presence of a common ano-genital pore in the female, Baylis questions its generic significance. A detailed and illustrated account is given of *R. rondoni* collected from *Doras (Pseudodoras) brunnescens* by Dr. Woodland from the Amazon.

R.T.L.

93—Annals of Tropical Medicine and Parasitology.

- a. CHATTERJI, R. C., 1936.—"On a new species of nematode, *Amplicaecum cacopii* sp. nov., from *Cacopus systoma*." 30 (1), 41-44.
- b. SOUTHWELL, T. & WALKER, A. J., 1936.—"Notes on a larval cestode from a fur-seal." 30 (1), 91-100.

(93b) Southwell & Walker describe *Phyllobothrium delphini*, a true cysticercus, from *Arctocephalus australis*. The scolex bears a myzorhynchus with, at its centre, a fifth accessory sucker, which is of smaller size in larger specimens. It is conjectured that this sucker disappears entirely before the adult stage is reached for the latter is probably *Phyllobothrium tumidum*, of the man-eater and mackerel sharks.

E.M.S.

94—Annual Report of the Department of Plant Pathology, Seale-Hayne Agricultural College.

- a. ANON, 1936.—"Twelfth Annual Report for the year ending September 30th, 1935." Pamphlet No. 46, 32 pp.

(94a) Brief report is made on hot-water treatment of violets, strawberries and grape hyacinths. *Aphelenchoides olesistus* is recorded from *Primula* var. "Jewel" associated with stunting similar to "red plant" in strawberry.

Tulip root in oats due to *Anguillulina dipsaci* and potato sickness due to *Heterodera schachtii* are reported, as are also attacks of *A. dipsaci* on narcissus and hyacinths, *H. marioni* on tomatoes and *Aph. ritzema-bosi* on chrysanthemums. The report contains a short paper on investigations on the hot-water treatment of narcissus bulbs particularly on the defects of bulb baths at present in use and recommendations for their improvement are made. Hot-water treatment of potatoes is dealt with, and its retarding effect on sprouting owing to lateness of treatment is noted. T.G.

95—Archiv für Schiffs- und Tropen-Hygiene.

a. VOGEL, H., 1936.—“Beobachtungen über Fasciolopsisinfektion.” 40 (5), 181-187.

(95a) After self-infection with *Fasciolopsis buski* by swallowing cercariae encysted on the Chinese red water-chestnut, Vogel unsuccessfully attempted to infect *Planorbis schmackeri* and *Segmentina nitidella* with miracidia hatched from eggs. Varying the number of miracidia to which the snails were exposed, using snails of different ages, and varying the water temperature, all had no effect on the result.

Apart from an attack of bacillary dysentery 10 days after the autoinfection, the only symptoms of Fasciolopsiasis took the form of attacks of colic after the 35th day. These became less frequent and disappeared within seven months. A year after infection, an eosinophilia of 19% was found. Eggs first appeared in the stool 10 weeks after infection. It is estimated that one fluke is responsible for 126 ova per gramme of formed stool. B.G.P.

96—Archives des Maladies du Coeur, des Vaisseaux et du Sang.

a. HATZEGANU, I., VASILIU, T. & MOGA, A., 1936.—“Le kyste hydatique du coeur simulant un anévrisme.” 29 (1), 72-78.

97—Archivio Italiano di Scienze Mediche Coloniali.

a. SATTA, E., 1936.—“Identificazione del primo focolaio di “Bilharziosi intestinale” da *Sch. mansoni* nella Colonia Eritrea.” 17 (4), 193-205.
 b. BACCHELLI, G., 1936.—“Sul primo caso di Bilharziosi intestinale da *Schi. mansoni* osservato nella Somalia Italiana.” 17 (4), 206-208.

98—Archivos Uruguayos de Medicina, Cirugía y Especialidades.

a. URIOSTE, J. P., PIAGGIO-BLANCO, R. A. & ARTAGAVEYTIA, A. C., 1936.—“Dos casos de quiste hidático de hígado abiertos en la vena cava inferior.” 8 (3), 226-237.

99—Australian Veterinary Journal.

a. GORDON, H. McL., 1936.—“Some field observations on various diseases of sheep.” 12 (1), 28-31.
 b. EDGAR, G., 1936.—“Fatal effect of heavy infestation with *Cooperia curticei* (Railliet, 1893) in goats.” 12 (2), 58-61.
 c. ROSE, A. L., 1936.—“A note on the toxicity of nicotine sulphate for lambs.” 12 (2), 64-65.

(99a) Gordon found intussusception of the small intestine in a lamb in New South Wales and considers that the numerous nodules of *Oesophagostomum columbianum* which were present may have initiated this condition. The author also points out that little is known of the pathogenicity of *Nematodirus* spp. in sheep and notes cases showing some loss of condition and diarrhoea where these parasites formed the greater part of the infestation. Species of the genera *Cooperia* and *Paramphistomum*, which are more commonly found in cattle, were also observed in sheep. D.O.M.

(99b) Edgar considers that the gross infestation by *Cooperia curticei* of a Saanen goat in which 30,000 of these worms were estimated to be present in the small intestine at post mortem was the cause of an outbreak of disease in goats near Sydney. Symptoms were diarrhoea, capricious appetite, loss of flesh. Almost invariably death occurred within five to ten days. He attributes the high incidence of parasitism in sheep and goats in this district to the high rainfall. J.W.G.L.

(99c) Rose gives the symptoms and post mortem appearance of poisoning resulting from overdosing a flock of 500 lambs with a mixture of nicotine sulphate and copper sulphate as an anthelmintic against the small trichostongyles. Approximately double the recommended dose was given to the lambs after being trucked 140 miles and starved for 24 hours. Forty-two lambs died. J.W.G.L.

100—Berliner Tierärztliche Wochenschrift.

a. BERGER, A., 1936.—“Erfolgreiche Wurmkuren.” 1936 (24), 393.

(100a) Berger recommends the drugs “Noemin” against helminths in horses, and “Tätivon” for pigs, dogs and cats. He claims that “Noemin” is cheap, easily administered, harmless, reliable, and mildly laxative; the dose is repeated in eight days. B.G.P.

101—Bollettino della Sezione Italiana. Società Internazionale di Microbiologia.

a. GENTILE, G., 1936.—“Recherches expérimentales sur le *Taenia echinococcus*.” 8 (5), 106-111.

(101a) An account is given by Gentile of a series of experiments which show that the embryophores of *Taenia echinococcus* and of *T. saginata* are not liberated even after being kept at 37°C. by the action of the gastric juice, the bile and the duodenal secretion. The parasites free themselves by their own activity. R.T.L.

102—Bulletin Mensuel de l'Office International d'Hygiène Publique.

a. SIMITCH, T., 1936.—“Les parasites intestinaux en Serbie du Sud.” 28 (5), 861-886.

(102a) In this paper which is mainly concerned with protozoal parasites Simitch records the occurrence of *Taenia solium*, *T. saginata* and *Hymenolepis nana*, *Ascaris lumbricoides*, *Trichuris trichiura*, *Oxyuris vermicularis* and *Strongyloides stercoralis*, in southern Serbia. R.T.L.

103—Bulletin du Musée Royal d'Histoire Naturelle de Belgique.

a. SCHUURMANS STEKHOVEN, jr., J. H., 1936.—“ Nouvelles recherches sur les nématodes parasites des plantes au Congo Belge.” 12 (9), [Reprint 16 pp.].

(103a) Schuurmans Stekhoven lists 22 hosts of *Heterodera marioni* occurring in the Belgian Congo, 11 c^e which have not previously been recorded. Morphological descriptions are given of *Tylenchorhynchus robustus* from the roots of coffee, *Aphelenchus parietinus* from roots of *Elaeis*, *Aphelenchus tenuicaudatus* found with *A. cocophilus* in the trunks of *Elaeis guineensis*, and their affinities and economic significance are discussed. *Cephalobus persegnis* f. *apicatus* and *Rhabditis monhystera* are described from the trunks of *Oreodoxa*, and *Rhabditis elongata* and *Diplogaster longicauda* from the trunks of *Cocos plumosa*; these forms are concluded to be saprophytic. M.J.T.

104—Bulletin de la Société Médico-Chirurgicale de l'Indochine.

a. GALLIARD, H., 1936.—“ Sur un cas mortel d'anguillulose observé à Hanoi.” 14 (3), 335-339.
 b. GALLIARD, H., PHAN-HUY-QUAT & DANG-VAN-NGU, 1936.—“ Le troisième cas de distomatose pancréatique à *Clonorchis sinensis* observé au Tonkin.” 14 (4), 379-383.
 c. QUENARDEL, 1936.—“ Observations sur le traitement de l'ankylostomiasis.” 14 (4), 388-394.

(104c) Quenardel has treated 9 patients for ancylostomiasis with chenopodium, “ Didakene ” and “ Rotenone ” both separately and together. All the patients suffered from a severe anaemia. After considerable treatment the patients were still positive for ancylostoma but there had been a marked improvement clinically, the signs of anaemia having almost disappeared in every case. P.A.C.

105—Bulletin de la Société de Pathologie Exotique.

a. TISSEUIL, J., 1936.—“ Contribution à l'étude étiologique de la lymphangite endémique et de l'éléphantiasis.” 29 (4), 374-377.
 b. BERNY, P., 1936.—“ Tuberculose et ankylostomiasis.” 29 (5), 471-474.
 c. PIÉRI, J. & SARDON, 1936.—“ A propos d'un cas de bilharziose vésicale traité par le 110 L. (antimoniothiomalate de lithium).” 29 (5), 508-513.
 d. PIÉRI, J. & BOUET, 1936.—“ Ictère par anguillulose rebelle. Guérison par instillations duodénales de térébenthine colloïdale.” 29 (5), 513-516.
 e. JOYEUX, C. & BAER, J., 1936.—“ Helminthes des rats de Madagascar. Contribution à l'étude de *Davainea madagascariensis* (Dav., 1869).” 29 (5), 611-619.

(105a) Tisseuil concludes that in French Guiana *Filaria bancrofti* has no rôle in the appearance or development of lymphangitis and elephantiasis which he attributes to the action of a virus. R.T.L.

(105b) In French Guiana Berny has observed that 30% of the cases of tubercle are carriers of hookworm. There is a marked eosinophilia in about 50%. The tubercle infection runs a similar course in parasitized and non-parasitized patients. R.T.L.

(105d) Piéri & Bouet report a case of icterus which was associated with *Strongyloides stercoralis*. Encouraging results were obtained by means of duodenal injections of colloidal terebenthine.

P.A.C.

(105e) Joyeux & Baer have undertaken a survey of the Davaineinae of common animals of Madagascar, in order to find out the natural hosts of those rare human parasites described under the name *Davainea madagascariensis*. No specimens have yet been received from the exact localities where the human forms were recorded. Here is described *Raillietina (Raillietina) murium* n. sp., a rare parasite of *Rattus rattus* found in only one of over 400 rats throughout the island. It does not correspond to any of the descriptions of *Davainea madagascariensis* which are clear enough for comparison.

E.M.S.

106—Canadian Journal of Research. Section D. Zoological Sciences.

a. CAMERON, T. W. M., 1936.—“Studies on the endoparasitic fauna of Trinidad. III. Some parasites of Trinidad carnivores.” 14 (4), 25-38.

(106a) Continuing his account of the helminth parasites of Trinidad, Cameron records two new cestodes, five new nematodes and two new acanthocephala from carnivores. From *Felis pardalis* he describes *Diphyllobothrium urichi* n. sp. and *Molineus pardalis* n. sp. From *Procyon cancrivora*: *Diphyllobothrium trinitatis* n. sp., *Necator urichi* n. sp., *Molineus* sp., *Prosthorkynchus urichi* n. sp., *Paridosentis* sp. and *Physaloptera maxillaris* Molin, 1860. From *Tayra barbara*: *Molineus major* n. sp. and *M. barbaris* n. sp. A table is given for the differentiation of the three new species of *Molineus* recorded in the text.

R.T.L.

107—Comptes Rendus des Séances de la Société de Biologie.

a. CORDIER, R., 1936.—“Sur la formation de la membrane de fécondation chez *Ascaris megalocephala*.” 122 (16), 106-107.

108—Eesti Loomaarstlik Ringvade.

a. OTS, H., 1936.—“Maksakaantöbi lammastel ja veistel Eestis.” 12 (2), 40-56. [In Estonian.]
 b. RIDALA, V., 1936.—“Tetrakloorsüsiniik maksakaantöve ravimina.” 12 (2), 56-72. [In Estonian: English summary p. 69.]

(108a) [Liver-fluke in sheep and cattle in Estonia.]

(108b) [Carbon tetrachloride as a drug against distomatosis.]

109—Farming in South Africa.

a. MOORE, E. S. & SMITH, A. J., 1936.—“Pests and diseases in tobacco seedbeds.” 11 (121), 135-138.
 b. MÖNNIG, H. O., 1936.—“Carbon-tetrachloride and tetra-chlorethylene for worms in animals.” 11 (123), 239.

(109a) Moore & Smith briefly describe the conditions under which root-knot occurs as a parasite of tobacco seedlings, the symptoms shown by the plants and the life cycle of the parasite.

M.J.T.

110—Flugblatt. Biologische Reichsanstalt für Land- und Forstwirtschaft.

a. GOFFART, H., 1936.—“Kartoffelmüdigkeit.” No. 129, 4 pp. [2nd edition.]

(110a) This second edition of Goffart's pamphlet on *Heterodera schachtii* in potatoes is almost identical with the first edition [see Helm. Abs., Vol. III, No. 68a].

M.J.T.

111—Gardeners' Chronicle.

a. WILLIAMS, P. H., 1936.—“A new eelworm disease of the tomato.” 99 (2577), 316.

(111a) Williams describes and gives a photograph of a spongy gall formation on the stem and leafstalks of a young tomato plant due to infection with the stem eelworm, *Anguillulina dipsaci*. He also reports a successful transmission of the parasite to other young tomato plants by spraying them with a suspension of the crushed galls. This is a new host record for *A. dipsaci*.

T.G.

112—Illinois Biological Monographs.

a. MILLER, E. L., 1936.—“Studies on North American cercariae.” 14 (2), 125 pp.

(112a) In this comprehensive monograph Miller describes 23 larval trematodes of Illinois, Louisiana and Florida. An identification key is provided for the Illinois forms. The relative merits of various morphological characters of the larva for diagnostic value are discussed.

R.T.L.

113—Indian Journal of Medical Research.

a. RAO, S. S., 1936.—“Filariasis in Patnagarh (Orissa Feudatory State).” 23 (4), 871-879.

b. MENON, K. P. & IYER, P. V. S., 1936.—“The viability of the ‘infective’ forms of the larvae of *Wuchereria bancrofti* when freed from the mosquito host.” 23 (4), 881-883.

(113a) Rao has surveyed the population of the rural town of Patnagarh in the Patna State in Orissa which has long been known to be heavily infected with filariasis. The infection is entirely due to *Filaria malayi* and not to *F. bancrofti*. The highest microfilaria rate was 40% in the ward Gadbihar and the percentage infection was practically the same for all ages. Of the various indigenous mosquitoes examined *Mansonia (Mansonioides) annuliferus* Theobald, the commonest mosquito, was ascertained to be the principal vector. Twenty three out of 110 specimens were found to be naturally infected. Species of *Culex* and *Anopheles* do not appear to be concerned in the transmission of *F. malayi*. The large tanks which occur in the area surrounding the town and are densely covered with *Pistia* are the chief breeding places of *Mansonioides*.

R.T.L.

(113b) The infective larvae of *Filaria bancrofti* freed from naturally infected *Culex fatigans* lived in tap water from $4\frac{1}{2}$ to $6\frac{1}{2}$ hours.

R.T.L.

114—Indian Veterinary Journal.

a. BHATIA, S. N., 1936.—“Parasitic cystitis in a goat.” 12 (4), 340.

(114a) A *Cysticercus tenuicollis* attached to the anterior end of the bladder was found at postmortem of a goat to be responsible for difficulty in micturition. The urine was passed spasmodically in drops and frequent attempts at micturition were accompanied by pain. R.T.L.

115—International Clinics.

a. DALAND, J., 1936.—“Clinical observations on onchocerciasis.” (Ser. 46), 1, 102-111.

(115a) Daland reviews previous work on onchocerciasis in man in the New World. R.T.L.

116—Journal of Agricultural Research.

a. LUCKER, J. T., 1936.—“Extent of vertical migration of horse strongyle larvae in soils of different types.” 52 (5), 353-361.

(116a) Lucker showed by outdoor and indoor experiments that there is practically no vertical migration of horse strongyle larvae in clay soils. In heavy sandy loam and sandy clay loam, during a period of 4 to 6 weeks, very few larvae migrated to the surface after being buried 4 to $5\frac{1}{2}$ inches and 3.5% or more migrated to the surface after a burial of 1, 2 or $2\frac{1}{2}$ inches. With sandy loam and sandy clay loam 0.027 to 7% of larvae reached the surface from depths of 1 to 6 inches in 19 to 67 days. Deep ploughing should be of use in controlling strongyles especially in clay soils. J.W.G.L.

117—Journal of the American Medical Association.

a. MERRITT, H. H. & ROSENBAUM, M., 1936.—“Involvement of the nervous system in trichiniasis.” 106 (19), 1646-1649.

118—Journal of the American Veterinary Medical Association.

a. WHITLOCK, J. H. & MORRILL, C. C., 1936.—“An acanthocephalid parasitic in a calf.” 88 (6), 764-766.

(118a) Whitlock & Morrill give the first record of a natural infection of a bovine with a large acanthocephalid parasite. This parasite is probably *Macracanthorhynchus hirudinaceus*, which reached the considerable size of 15 cm. and was found in the lower jejunum of a calf from the vicinity of Riley, Kansas. J.W.G.L.

119—Journal de Chirurgie.

a. MELNIKOFF, A., 1936.—“Sur la chirurgie des kystes hydatiques.” 47 (2), 197-219.

120—Journal of Comparative Pathology and Therapeutics.

a. WALKER, A. E., 1936.—“Cysticercosis cellulosae in the monkey. A case report.” 49 (2), 141-145.
b. CAWSTON, F. G., 1936.—“The attempted cure of schistosomiasis in stock.” 49 (2), 146-147.

(120b) Investigations would seem to show that "Stibilase" and "Trystibine" are more potent in schistosomiasis than in trypanosomiasis and may prove of value in the treatment of stock. Prophylactic measures may however render the treatment of sheep unnecessary. R.T.L.

121—Journal of the Egyptian Medical Association.

- a. KHALIL, M., 1936.—"Heterophyes heterophyes." In "Proceedings of the Egyptian Society of Medical Science, 4th Meeting." 19 (4), 183.
- b. KHALIL, M. & NAGATY, H. F., 1936.—"An account of an ewe treated with Fouadin for Fascioliasis [Fascioliasis]." In "Proceedings of the Egyptian Society of Endemic Diseases and Tropical Medicine, 2nd Year, Vol. III." 19 (5), 203-204.
- c. VARIOUS AUTHORS, 1936.—"Discussion on some aspects of antimony treatment of schistosomiasis." In "Proceedings of the Egyptian Society of Endemic Diseases and Tropical Medicine, 2nd Year, Vol. III." 19 (5), 244-246.

(121a) The encysted cercariae of *Heterophyes heterophyes* can remain alive in salted *Mugil cephalus* for at least one week. Of 60 children at Mataria 53 were found infected. The first intermediate host is a salt water snail *Pirenelia conica* which is very common in Lake Manzala. R.T.L.

(121b) Khalil & Nagaty were unsuccessful in treating *Fasciola gigantica* in a ewe by almost daily intramuscular injections of Fouadin. *Fasciola* eggs decreased to nil over the month's period of treatment, but about 15 live adults were found at post mortem. J.W.G.L.

(121c) At a colloquium of the Egyptian Society of Endemic Diseases and Tropical Medicine, held for the purpose of discussing the reasons why antimony treatment of bilharziosis cures some, fails in others, and even kills some of the patients, Dr. Salah suggested that incomplete courses of treatment turned open into closed bilharziosis with greater liability to visceral complications. Prof. Khalil stated that the course of Fouadin now given was not sufficient to kill the worms. In a recent fatal case of Fouadin poisoning he attributed the intolerance to failure of the kidneys to excrete the antimony. Dr. Makrahi suggested that anaemia was a predisposing factor. Dr. Aly Hassan referred to two children who showed living Bilharzia ova after 20 injections of Fouadin. Prof. Khalil thought that children were better able to excrete antimony. The possibility of antimony-resistant Bilharzia worms was discussed by Dr. Sobky and Dr. Salah. R.T.L.

122—Journal of Helminthology.

- a. PETERS, B. G., 1936.—"Paronchocerca ciconiarum n.g., n. sp. from the Saddle-billed Stork in West Africa." 14 (1), 1-10.
- b. SMEDLEY, E. M., 1936.—"The action of certain halogen compounds on the potato eelworm, *Heterodera schachtii*." 14 (1), 11-20.
- c. BERBERIAN, D. A., 1936.—"Some observations on the effect of digestive juices on scolices of *Echinococcus granulosus* (Batsch)." 14 (1), 21-40.
- d. EDWARDS, E. E., 1936.—"Investigations on the nematode disease of potatoes caused by *Anguillulina dipsaci*." 14 (1), 41-60.
- e. CLAPHAM, P. A., 1936.—"Further observations on occurrence and incidence of helminths in British partridges." 14 (2), 61-68.

- f. GOODEY, T., 1936.—“A new dorylaimid nematode *Xiphinema radicicola* n. sp.” **14** (2), 69-72.
- g. LEROUX, P. L., 1936.—“A new trichostrongylid (*Minutostrongylus taurotragi* g. et sp. n.), of the subfamily Heligmosominae from an African antelope.” **14** (2), 73-76.
- h. JOHNSON, L. R., 1936.—“Observations on the occurrence of *Anguillulina dipsaci* (Kühn, 1858) on rhubarb in Yorkshire.” **14** (2), 77-84.
- i. DAVEY, D. G., 1936.—“On the incidence of the abomasal parasites in the lambs of south-west Britain.” **14** (2), 85-92.
- j. HODSON, W. E. H. & GIBSON, G. W., 1936.—“On *Aphelenchoides hodsoni* Goodey, attacking narcissus.” **14** (2), 93-98.
- k. FRASER, A. H. H., ROBERTSON, D. & RITCHIE, J. E., 1936.—“The correlation between the worm-burden and live-weight increase of grazing sheep.” **14** (2), 99-100.
- l. FRASER, A. H. H., ROBERTSON, D. & RITCHIE, J. E., 1936.—“The effect of salting pasture on the incidence of stomach worms in sheep.” **14** (2), 101-106.
- m. GOODEY, T., 1936.—“On *Anguillulina oryzae* (v. Breda de Haan, 1902) Goodey, 1932, a nematode parasite of the roots of rice, *Oryza sativa* L.” **14** (2), 107-112.
- n. LEROUX, P. L., 1936.—“On *Schwartziella*, a new nematode genus for *Cooperia nodulosa* Schwartz, 1928.” **14** (2), 113-118.
- o. LEIPER, J. W. G., 1936.—“The occurrence of *Molineus patens* (Dujardin, 1845) in English stoats and weasels.” **14** (2), 119-126.

(122a) To the new genus *Paronchocerca*, erected for *P. ciconiarum* n. sp. from the heart of *Ephippiorhynchus senegalensis* and *Dissoura episcopus*, Peters transfers *Onchocerca bambusicolae* Hsi-Chieh Li, 1933, and discusses the relationships of these with other *Onchocercinae*. B.G.P.

(122b) Smedley describes experiments to show that solutions containing hypochlorite can dissolve eelworm cysts, or in high dilution can stimulate hatching. The action is attributed mainly to the particular effect of hypochlorites on proteins, rather than to the oxidising or other chemical effect of the solution. E.M.S.

(122c) Berberian considers that natural immunity or susceptibility to infestation with *Echinococcus granulosus* is dependent primarily upon the action of the digestive juices, particularly that of the intestine. Fresh, viable hydatid scolices were placed in the digestive juices of dogs, kittens, sheep, cattle and man, incubated at 37°C., and the action of the fluids studied microscopically. *In vivo* experiments were performed on kittens, rats and rabbits to which were fed large quantities of scolices and cyst membrane; the animals were killed at definite time intervals and their intestinal tract carefully examined. The gastric juice of all animals used was found to have practically no digestive power, except that of man which began to be effective only after about 8 hours, caused incomplete digestion and acted only on evaginated scolices. The intestinal juice of all animals used, including man but excepting the dog and cat, was capable of digesting scolices completely and, on this account, they are considered by the author as immune to infestation. The intestinal juice of the dog and cat, however, was inactive and although kittens were slightly susceptible, the infestation was relatively light and the rate of development retarded; hence the author regards the cat as an abnormal host. It was observed, in general, that digestion began

with evaginated scolices while invaginated scolices either escaped digestion and were passed in the faeces or were digested slowly and often partially.

J.N.O.

(122d) Edwards gives an account of investigations on potato tubers attacked by *Anguillulina dipsaci*. He tested a number of soil fumigants and chemical fertilizers but found that none of them had any deterrent effect on the parasite. In a series of variety trials all the varieties grown were attacked but evidence is produced which indicates that "King Edward" is less susceptible and "Majestic" more susceptible than several other varieties. In discussing the influence of the time of lifting the crop on incidence of disease it is suggested that early lifting diminishes the risk of attack and late lifting increases it. The paper also contains a brief discussion on biological strains of *A. dipsaci* in relation to the potato race of the parasite. The question of its persistence in the soil and mode of dispersal are also discussed. In a final section recommendations for control are made. T.G.

(122e) Clapham records the presence of *Raillietina cesticillus*, *Amoebotaenia cuneata* and *Harmostomum commutatum* in partridges. Certain factors which influence nematode and cestode infestation are discussed.

P.A.C.

(122f) Under the name of *Xiphinema radicicola* Goodey describes and figures a new species of dorylaimid nematode from a collection of eelworms obtained from diseased pepper roots in the Dutch East Indies. The principal distinguishing features of the new species, females only of which were found, are the tapering conical tail, the forward position of the vulva and the single posterior ovary.

T.G.

(122g) Leroux gives a morphological description of *Minutostrongylus taurotragi* gen. et sp. n. based on one female and two male specimens recovered from the duodenum of an eland, *Taurotragus oryx*, shot in the Nega Nega Hills, near Mazabuka, Northern Rhodesia. A definition is given of the new genus which may be differentiated from other genera of the subfamily Heligmosominae by the use of Yorke and Maplestone's key, which has been amended. It also differs from *Heligmosomoides*, *Nematospira*, *Vianiaia* and *Viannella* in not being spirally coiled.

J.N.O.

(122h) Johnson deals with *Anguillulina dipsaci* as a constant associate of crown rot of rhubarb in Yorkshire. A short historical account of the earliest records of the parasite on rhubarb is given and of the work of Millard, who found that *Bacterium rhabonticum* is the causative organism of the disease. Johnson's own observations confirm Taylor's earlier findings that the nematode is most abundant at the junction of healthy and diseased tissue. He describes the lesions set up in the crown and fang roots and suggests that the eelworm may be of primary importance in the development of crown rot. He has found experimentally that *A. dipsaci* from rhubarb and oats are reciprocally infective; a result which lends support to the view held amongst rhubarb growers in Yorkshire that the cropping of land, previously carrying diseased rhubarb, with oats tended to increase rather than to diminish the incidence of crown rot.

T.G.

(122i) Davey gives an account of the abomasal parasites of 600 abattoir lambs in south-west Britain and a table of counts of abomasal helminths in 100 of these lambs. Stress is laid on the frequency of *Ostertagia*. The numbers present are all well below the pathogenic count (10,000) of other authors.

J.W.G.L.

(122j) Hodson & Gibson deal with certain bionomical aspects of disease in narcissus bulbs due to *Aphelenchooides hodsoni*. Except for an isolated infection on "Emperor" bulbs at Seale-Hayne Agricultural College in Devon, infestation has only been found in "Sir Watkin" bulbs in the Scilly Isles. The parasite has, however, been found capable of attacking bulbs of "Sir Watkin" under experimental conditions at Reading where climatic and soil factors are very different from those pertaining in the Scilly Isles. It has been found that on land carrying bulbs infested with the parasite other varieties of narcissus, notably "Soleil d'Or," can be safely grown as they prove resistant to attack. Symptoms of disease on "Sir Watkin" in the foliage and the bulb are described. There is an absence of spicules on the leaves. Evidence is presented that bulbs can withstand attack for a long time and that the chief effect of the parasite is to prevent the bulbs from increasing in weight during the growing season. Infected bulbs can be successfully treated by the standard hot-water bath.

T.G.

(122k) In a group of 31 parasite free lambs placed on a heavily sheeped pasture for 50 days, Fraser and his co-workers found a significant correlation between the worm-burden at autopsy and the live-weight increase during the grazing period. Lambs showing the greatest live-weight increase tended to contain the greatest numbers of worms and the authors consider that these rapidly thriving animals would eat more grass and consequently ingest more larval worms.

D.O.M.

(122l) Fraser and his co-workers found that the salting of infected sheep pastures does not give promise as a method of controlling stomach worms in sheep. Although a significant reduction was observed in the number of *Haemonchus contortus* in lambs on the salted pasture there was no apparent effect on the *Ostertagia* and *Trichostrongylus* infestations.

D.O.M.

(122m) Goodey gives a morphological account of *Anguillulina oryzae*, preserved specimens of which were received from the Dutch East Indies. Measurements and dimensions of adults of both sexes are given. The posterior glandular part of the oesophagus is comparatively large and lies ventro-laterally to the beginning of the intestine. The tip of the tail in both male and female is furnished with a minute slender process and there is a small lateral papilla on each side of the tail in both sexes. The species is apparently a somewhat harmless parasite of rice roots. In discussing the systematics of *A. oryzae* its close similarity to *A. apapillata* (Imamura, 1931) is indicated and it is suggested that the latter species may be identical with it.

T.G.

(122n) Leroux proposes the erection of *Schwartzella* n. g. to receive *Cooperia nodulosa* and *C. serrata* because they differ from the type species of the genus *Cooperia* by the absence of a telamon and by the spicules and arrangement of the bursal rays being atypical. The new genus is defined

and *Schwartziella nodulosa* is designated as the type species. Leroux compares, in tabular form, *S. nodulosa* (Schwartz, 1928) with *S. serrata* as described by Mönnig (1931) and Daubney (1933) and mentions that the latter form is very closely related to, if not identical with, the type species.

J.N.O.

(1220) J. W. G. Leiper records the presence of *Molineus patens* for the first time in England. He gives a further description of the parasite, compares it with the other members of the genus and suggests that *M. americanus* is a synonym of *M. patens*. J.W.G.L.

123—Journal of the Ministry of Agriculture.

- a. JOHNSON, L. R. & THOMPSON, H. W., 1936.—“Tomato sickness in Yorkshire.” 43 (1), 48-54.
- b. SMALL, T., 1936.—“Diseases of outdoor-grown tomatoes in Jersey.” 43 (2), 117-124.

(123a) Johnson & Thompson describe the symptoms shown by tomato plants attacked by *Heterodera schachtii*.

Heavy infestations occur in Yorkshire, causing loss of crop where tomatoes are grown in soil containing cysts of the potato strain. Plants layered into clean soil make some recovery. Mercuric chloride watered into infested land, at the rate of one gallon per square yard, in solutions of 1 in 150 and 1 in 250 gave good results where steam sterilization could not be carried out.

M.J.T.

(123b) Small found *Heterodera marioni* of common occurrence among field grown tomatoes in Jersey. Whizzed naphthalene, calcium cyanamide and paradichlorbenzene harrowed into the soil at the rates of 10 oz., 9 oz., 2½ oz. per square yard respectively failed to control the nematode. M.J.T.

124—Journal of Parasitology.

- a. CULBERTSON, J. T., 1936.—“The cercaricidal action of normal serums.” 22 (2), 111-125.
- b. CHU, T. C., 1936.—“A review of the status of the reptilian nematodes of the genus *Rhabdias* with a redescription of *Rhabdias fuscovenosa* var. *catanensis* (Rizzo, 1902) new rank.” 22 (2), 130-139.
- c. CHU, T. C., 1936.—“Studies on the life history of *Rhabdias fuscovenosa* var. *catanensis* (Rizzo, 1902).” 22 (2), 140-160.
- d. STOLL, N. R., 1936.—“Tapeworm studies. III. Sheep parasitized with one *Moniezia expansa* each.” 22 (2), 161-179.
- e. PROMMAS, C. & DAENGSVANG, S., 1936.—“Further report of a study on the life cycle of *Gnathostoma spinigerum*.” 22 (2), 180-186.
- f. THRELKELD, W. L. & DOWNING, T. O., 1936.—“A report on experimental infections of *Ovis aries* with the infective larvae of *Ostertagia circumcincta*.” 22 (2), 187-201.
- g. VAN CLEAVE, H. J., 1936.—“The recognition of a new order in the Acanthocephala.” 22 (2), 202-206.
- h. GIOVANNOLA, A., 1936.—“Energy and food reserves in the development of nematodes.” 22 (2), 207-218.
- i. ANDREWS, J. S., 1936.—“Note on the egg producing capacity of *Cooperia curvata*, a nematode parasitic in sheep.” 22 (2), 222-223.

- j. BERGHE, L. VAN DER, 1936.—“On the occurrence of a species of *Acanthostoma* closely related to *A. duodenale* in an African lemur.” 22 (2), 224-226.
- k. WOODHEAD, A. E., 1936.—“An extraordinary case of multiple infection with the sporocysts of *Leucocloridium*.” 22 (2), 227-228.
- l. BYRD, E. E., 1936.—“A new trematode parasite, *Renifer wardi* n. sp., from the watersnake, *Natrix rhombifera*, from Columbus, Mississippi.” 22 (2), 229-231.
- m. NOBLE, A. E., 1936.—“New avian trematodes of the genus *Neodiplostomum*.” 22 (3), 247-254.
- n. YOUNG, R. T., 1936.—“A fork-tailed cercaria from Bering Sea, with a note on the marine furcocercous cercariae hitherto described.” 22 (3), 255-258.
- o. WOODHEAD, A. E. & MALEWITZ, H., 1936.—“*Mediogonimus ovilacus* n. g., n. sp.” 22 (3), 273-275.
- p. GIOVANNOLA, A., 1936.—“Unisexual infection with *Schistosoma mansoni*.” 22 (3), 289-290.
- q. LEVINE, P. P., 1936.—“A new method for embryonating nematode eggs in fecal discharges.” 22 (3), 291.
- r. GIOVANNOLA, A., 1936.—“Inversion in the periodicity of emission of cercariae from their snail hosts by reversal of light and darkness.” 22 (3), 292-295.
- s. McMULLEN, D. B., 1936.—“A note on the life cycle of *Mosesia chordeilesia* n. sp. (Lecithodendriidae).” 22 (3), 295-298.
- t. BYRD, E. E., 1936.—“Studies in parasitology. V. The intestinal parasites in 257 college freshmen.” 22 (3), 301-302.
- u. GIOVANNOLA, A., 1936.—“Comparative action of tartar emetic and Fouadin on *Schistosoma mansoni* in vitro.” 22 (3), 302-303.

(124a) The normal serum of all classes of vertebrates has an antagonistic action against cercariae. The substance is highly labile, being destroyed by heat, desiccation and storage. It can be removed from the serum by absorption with a dry mass of cercariae or of bacteria. R.T.L.

(124c) By growing the free-living stages on pure cultures of living bacteria, Chu has observed concurrent direct and indirect types of development in the free-living phases of *Rhabdias fuscovenosa*. Infective larvae applied to the skin failed to infect. Both direct and indirect types of development were obtained from eggs of a single parasitic worm. No evidence of a parasitic male was obtained. R.T.L.

(124d) Infection with one *Moniezia expansa* occurred in two instances after exposure of a sheep for 7½ to 9 hours only on infested ground. There was a definite cycle of proglottid production and the total number of proglottids passed in the patent period of 54 days was about 4,000 and between 40 and 80 million eggs. The prepatent period was 37 days. R.T.L.

(124e) As attempts to infect cats with cyclops containing larvae of *Gnathostoma spinigerum* proved negative Promnas & Daengsvang succeeded, by feeding the cyclops to *Clarias batrachus* L., in demonstrating that this freshwater fish acts as the second intermediate host in which the larvae of *G. spinigerum* occur encysted in the muscles. R.T.L.

(124f) Experimental infections of sheep with light “pure line” infections of *Ostertagia circumcincta* apparently caused no injury to the host. With moderate doses (46,685 larvae) the only result over a period of 4 months was loss of weight. Large numbers (225,000 larvae) given to a lamb one month old affected its growth. There was a decrease in the percentage of

haemoglobin, a decrease in the percentage of lymphocytes and a pronounced eosinophilia. With enormous numbers (1,145,000 larvae) there was a loss of weight of 6½ pounds in three weeks and there were pathological changes with erythrocytosis followed by a decrease in the red cells and in the haemoglobin index and the number of leucocytes. The sheep had a dry, rough coat, was pot-bellied and cachetic, subject to intermittent constipation and during these periods there was shallow rapid respiration. R.T.L.

(124g) Van Cleave reviews previous attempts to classify the Acanthocephala. He is led to emend Meyer's classification (1931) by creating a new order Eoacanthocephala chiefly characterized by the possession of syncytial cement glands in the male and a single muscular wall in the proboscis receptacle. This new order he subdivides into Gyraanthocephala for those forms with body spines and Neoacanthocephala for those in which these spines are absent. The known families and genera are listed. R.T.L.

(124h) In this paper Giovannola reports his observations on the reserves of food in the important stages of the life cycles of nematodes and the relationship of these reserves to their activity. The fat granules stored in the filariform larvae of parasitic nematodes are an index of physiological age. The larvae of *Ascaris*, *Necator* and *Nippostrongylus* feed during their migration through the lung and store food as glycogen and later fat in the lumen of the intestinal tract and in the body cavity. The stored substances are distinguished as energy reserves and food reserves. The former is glycogen, the latter fat. R.T.L.

(124i) Andrews shows that the egg production of *Cooperia curticei* decreases per female as the total number of parasites increases. R.T.L.

(124j) A species of *Ancylostoma* which is named *A. duodenale galagoi* was collected from the lemur *Galago crassicaudatus* at Katanga. It is the first instance of an ankylostome occurring in a lemur. R.T.L.

(124m) Noble describes and illustrates *Neodiplostomum paraspaghala* n. sp., from the hawk *Archibuteo ferrugineus*, and *N. orchilongum* n. sp. from the great blue heron, *Ardea herodias*. B.G.P.

(124o) Woodhead & Malewitz describe a new fluke *Mediogonimus ovilacus* n. g., n. sp. from the liver of *Microtus pennsylvanicus pennsylvanicus* at Ann Arbor, Michigan. The genus belongs to the subfamily Prosthogniminae of Plagiorchiidae. It differs from *Prosthognimus* by having a median genital pore posterior and adjacent to the pharynx, a larger cirrus sac and a swollen uterus segment termed egg reservoir. It differs from *Schistogonimus* by having the genital pores very close together and in a characteristic median position, and an extracutural and diffuse uterus. R.T.L.

(124q) By using the maggots of *Musca domestica* to feed upon chicken faeces containing the eggs of *Capillaria columbae*, Levine has been able to reduce the quantity of faeces and to eliminate putrefaction of the faecal mass. The embryonated eggs so obtained produced heavy infections experimentally. R.T.L.

(124s) Xiphidiocercariae infecting 50% of the mayfly nymphs at the University of Michigan Biological Station were fed to a canary and the adults recovered are described as *Mosesia chordeilesia* n. sp. The first intermediary is *Goniobasis livescens*.
R.T.L.

(124u) *In vitro* tests made with adults, cercariae and eggs of *Schistosoma mansoni* show that tartar emetic has a direct action on all these stages and that this action is enormously superior to that of Fouadin.
R.T.L.

125—Journal of Pharmacology and Experimental Therapeutics.

- a. LAMSON, P. D., STOUGHTON, R. W. & BASS, A. D., 1936.—“Anthelmintic studies on alkylhydroxybenzenes. VI. Alkyl polycyclicphenols.” 56 (1), 50-52.
- b. LAMSON, P. D., STOUGHTON, R. W. & BASS, A. D., 1936.—“Anthelmintic studies on alkylhydroxybenzenes. VII. Halogenated phenols.” 56 (1), 60-62.
- c. LAMSON, P. D., STOUGHTON, R. W. & BASS, A. D., 1936.—“Anthelmintic studies on alkylhydroxybenzenes. VIII. A. Phenolic ketones. B. Phenolic ethers and esters. C. Organic acids.” 56 (1), 63-68.

(125a) Lamson, Stoughton & Bass have introduced alkyl radicals into certain polycyclicphenols and have tested their action against pig ascaris *in vitro*. They consider that although several of the monohydric polycyclicphenols studied have definite ascaricidal properties, they will have no advantage as human ascaricides over those already in use.
K.S.

(125b) Lamson, Stoughton & Bass, continuing their studies on the anthelmintic action of alkylhydroxybenzenes, have introduced halogens into certain alkylphenols. Testing their action against pig ascaris *in vitro*, they find that p-chlorocarvacrol, 4-chloro-2-hexylphenol and 4-chloro-2-heptylphenol have marked ascaricidal properties.
K.S.

(125c) Lamson, Stoughton & Bass have studied the anthelmintic action of a large number of phenolic ketones, phenolic ethers and esters, and organic acids, but find that none of them show marked *in vitro* ascaricidal properties. Certain monoethers of dihydricphenols were active, but proved too toxic for further clinical trial. Phenolic esters were made which were tasteless but none of these proved to be active ascaricides for dogs.
K.S.

126—Journal of the Royal Naval Medical Service.

- a. EDGAR, W. H., 1936.—“Report on a case of epilepsy due to infection by the *Schistosomum japonicum*.” 22 (2), 150-153.

127—Journal of the Royal Sanitary Institute.

- a. MÖNNIG, H. O., 1936.—“Meat hygiene: parasites.” 56 (12), 742-743.

128—Journal of the Shanghai Science Institute. Section IV.

- a. KOMIYA, Y., 1936.—“ Study on *Clonorchis sinensis* in the district of Shanghai. 2. On the habit of eating fresh water fish among the Japanese in Shanghai.” *2*, 61-73.
- b. KAWANA, H., 1936.—“ Study on *Clonorchis sinensis* in the district of Shanghai. 3. Dogs, cats and rats as reservoir hosts of *Clonorchis*.” *2*, 75-84.
- c. KOMIYA, Y., KAWANA, H. & TAO, C. S., 1936.—“ On the prevalence of helminthiasis among the Japanese and Chinese in the district of Shanghai. 1. Results of examinations of helminth ova among the Chinese children and students.” *2*, 85-94.

129—Journal of the South African Veterinary Medical Association.

- a. STONIER, L., 1936.—“ A note on onchocerciasis as observed at the Municipal Abattoir, Pietermaritzburg.” *7* (2), 49-51.

(129a) Stonier reports four cases in cattle near Pietermaritzburg, S. Africa, of extensive infection with *Onchocerca* nodules in the subcutaneous fascias of the head, neck, shoulder, forearm, thorax, abdomen and hind limbs.

R.T.L.

130—Journal of Tropical Medicine and Hygiene.

- a. HINMAN, E. H. & BAKER, D. D., 1936.—“ Helminthological survey of 1,315 dogs from New Orleans with special reference to age-resistance.” *39* (9), 101-104.
- b. BAKER, D. D. & HINMAN, E. H., 1936.—“ Studies of the suprarenal glands of dogs. II. A study of the influence of parasites upon the weights of the suprarenal glands of dogs.” *39* (10), 117-119.

(130a) Hinman & Baker's results from a helminthological survey of 1,315 dogs of New Orleans showed that the incidence was: *Dirofilaria* 24.4%, *Ancylostoma* 42.5%, *Toxocara* 1.9%, *Trichuris* 57.4%, *Dipylidium* 20.4% and *Taenia* 3.8%. Season, sex and breed showed little significance on incidence but mature dogs were more frequently infected with *Dirofilaria* than were immature dogs, and *Toxocara* was more frequently found in immature dogs. The finding of *Dirofilaria* in immature dogs showed that this parasite either matures in four or five months or can migrate through the placenta.

J.W.G.L.

(130b) Baker & Hinman have found that the presence of *Dirofilaria*, *Ancylostoma*, *Trichuris* or *Dipylidium* does not cause marked hypertrophy or atrophy of the suprarenal glands of the mature male dog, immature female and female dog in dioestrus.

K.S.

131—Kinderärztliche Praxis.

- a. HERZMANN, K., 1936.—“ Einige bemerkenswerte Fälle von Askaridiasis.” *7* (1), 15-17.

132—Medical Journal of Australia.

- a. PENFOLD, W. J., PENFOLD, H. B. & PHILLIPS, M., 1936.—“ Acquired active immunity in the ox to *Cysticercus bovis*.” *23rd Year*, *1* (13), 417-423.

(132a) From preliminary work on the life history of *Cysticercus bovis* the approximate age of individual cysts was determined. Penfold, Penfold & Phillips then carried out two carefully conducted experiments on cattle which they were satisfied were free from any previous infection with *Cysticercus bovis*. These showed that a primary dose of 400,000 *Taenia saginata* ova gave immunity to a similar dose at one year and at 70 weeks after the initial infection. Practical applications are suggested. J.W.G.L.

133—Medical Parasitology and Parasitic Diseases.

a. SKVORTSOV, A., SMIRNOVA, V. & SISYAKOVA, E., 1936.—“Studies on morphology and biology of the egg and on the evolution of *Fasciola hepatica*.” 5 (2), 257-274.

(133a) Although *Fasciola hepatica* miracidia can penetrate several species of *Limnaea*, *Planorbis* and *Physa* they develop only in *Limnaea truncatula*. The eggs resist a temperature of -6°. Their optimum for development is 25° to 30°. Miracidia only hatch in a medium of pH 4.2 to 7.2 and in it live for 30 to 40 hours. R.T.L.

134—Medical Record.

a. BROOKS, H. T., 1936.—“Trichinosis no longer a rare occurrence.” 143 (4), 140-142.

135—Medicina de Hoy.

a. KOURI, P., CALVO FONSECA, R. & BASNUEVO, J. G., 1936.—“Porcentaje y distribución geográfica del parasitismo intestinal de Cuba. Provincia de la Habana.” 1 (2), 32-36.

b. BASNUEVO, J. & ANIDO, V., 1936.—“La solución aceto-formo-azucarada en el enriquecimiento de huevos de parásitos en las heces fecales.” 1 (2), 49-50.

(135b) A new technique for the concentration of helminth eggs has been devised by Basnuevo & Anido. A solution is made up of acetic acid 100 c.c., formol 100 c.c., cane sugar 550 gm. and water up to a litre. Shake thoroughly until the sugar is dissolved, then filter. 15 c.c. is placed in a test tube. To this 1 gm. of faeces is added and shaken vigorously for three minutes. It is then filtered through a fine sieve. To the filtrate further solution is added and then left for 30 to 40 minutes. The eggs of hookworm, whipworm, Ascaris (except the unfertilized eggs), *Taenia* and *Hymenolepis*, become attached to a cover glass floated on the solution. R.T.L.

136—Memorias do Instituto Oswaldo Cruz.

a. FREITAS, J. F. TEIXEIRA DE & ALMEIDA, J. LINS DE, 1936.—“Segunda contribuição ao conhecimento da fauna helminthologica da Argentina: *Heteroxyxema Wernecki* n. sp.” 31 (2), 185-188.

137—Military Surgeon.

a. HUBER, W. M., 1936.—“A report of two cases of trichinosis simulating enteric fever.” 78 (1), 52-58.

138—Münchener Medizinische Wochenschrift.

a. SCHICK, E., 1936.—“Zur multiplen Zystizerkose des Menschen.” 83 (17), 694-696.

139—Münchener Tierärztliche Wochenschrift.

a. POPESCU, F., 1936.—“Die Behandlung der Filariose bei Hunden mit Fuadin.” 87 (17), 196-197.

b. SCHMID, F., 1936.—“Hygienische Massnahmen zur Bekämpfung der wichtigsten Nematodenerkrankungen unserer Haustiere.” 87 (23), 265-267.

(139a) Popescu finds that *Dirofilaria immitis* is fairly common in dogs in Romania. Hounds are especially susceptible and as a result become anaemic and lose their sense of smell. Microfilariae are present in concentrations up to 70,000 per c.c. Dogs are completely cured by intravenous injections of Fuadin in doses up to 0.8 c.c. per kg. body weight on each of three days and thence on alternate days until a cure is effected. Usually from five to eleven injections are necessary, but if toxic symptoms supervene injections are suspended. Inadequate doses have the effect of preventing a complete cure. Orchitis is a sign that the parasites are dead. B.G.P.

(139b) Since adequate anthelmintics are available against only a few of the helminths of domestic animals, and are in any case of little use in the presence of repeated reinfection, Schmid advocates the fuller use of prophylactic measures and deals with the general principles of their application. He emphasizes the value of heat, as in composting manure or in the heat-treatment of stable floors and walls, and of desiccation, as in the breaking up of faeces on pastures (preferably with the addition of lime). He also mentions such measures as: rotational grazing adjusted to avoid close cropping or overcrowding; the reservation of special pastures, uncontaminated by infected adults, for the use of young stock; dryness and freedom from faeces of drinking places, stables and (so far as practicable) pastures. B.G.P.

140—Nachrichtenblatt für den Deutschen Pflanzenschutzdienst.

a. GOFFART, H., 1936.—“Fortschritte in der Bekämpfung der Kartoffelnematoden (*Heterodera schachtii* Schm.).” 16 (4), 38-40; (5), 51-52.

(140a) Goffart describes further investigations on the control of “potato-sickness” by means of crop rotation, cultivation of immune varieties, and manurial and chemical treatments of soil.

During the cultivation of rye for four consecutive years the cyst content of land fell from 140 to 13 per 100 g. soil. Similar results were also obtained with wheat and barley. The yield of potatoes was found to vary inversely with the cyst content of the soil and a great increase in cyst content followed a single cropping with potatoes. No variety of potato showed immunity, but some varieties suffered less damage than others. No definite results are reported from the use of fertilizers or chemical treatments. M.J.T.

141—Nature.

a. WHITE, M. J. D., 1936.—“Chromosome cycle of *Ascaris megalocephala*.” 137 (3471), 783.

142—Nederlandsch Indische Bladen voor Diergeneeskunde.

a. MEYER, W. C. P., 1936.—“Trichinenkeuring bij varken en hond volgens de methode Reiszmann.” **48** (1/2), 41-47.

(142a) The older method of trichinella inspection involved examination of various muscles, including the pillars and the *pars costalis* of the diaphragm, whereas the Reiszmann method concentrates on the diaphragm pillars. Meyer has examined 42 samples from each of five predilection sites in each of 24 infected pigs, and has also compared the standard Reiszmann and older techniques in respect of 14 dogs and one cat, all infected. His results show that the diaphragm pillars are most heavily infected and that the Reiszmann method is therefore the more reliable.

B.G.P.

143—New England Journal of Medicine.

a. BLUMER, G., 1936.—“Trichinosis, with special reference to changed conceptions of the pathology and their bearing on the symptomatology.” **214** (25), 1229-1235.

144—New Orleans Medical and Surgical Journal.

a. HINMAN, E. H., 1936.—“Trichiniasis in Louisiana.” **88** (7), 445-448.
 b. KAMPMEIER, R. H., 1936.—“Clinical aspects of trichiniasis.” **88** (7), 448-451.

145—New Zealand Journal of Agriculture.

a. HOPKIRK, C. S. M., 1936.—“Dosing of sheep for control of parasites.” **52** (4), 254.
 b. ELPHICK, E. E., 1936.—“Care necessary in use of worm-drench for sheep. Precautions to be taken in preparing copper sulphate (bluestone) and nicotine sulphate drench.” **52** (5), 292-293.

(145a) Hopkirk gives a prescription, for use in New Zealand, for the treatment of intestinal parasites in sheep with copper sulphate and nicotine sulphate (40%). He has found that the amount of nicotine sulphate going to a pound varies with the brand used and therefore measures it in fluid ounces.

K.S.

(145b) Elphick states that heavy mortalities have occurred in sheep, due to the careless use of copper sulphate and nicotine sulphate as a worm-drench. Accurate measuring of these drugs is essential and preliminary starvation is not necessary. The stock solution which he recommends is made by adding 1 lb. of copper sulphate and 16 fl. oz. of 40% nicotine sulphate to 5 gallons of water. Of this mixture he uses $\frac{1}{2}$ oz. for lambs from four to seven months, 1 oz. for sheep of eight to twelve months and $1\frac{1}{2}$ oz. for adult sheep.

K.S.

146—Okayama-Igakkai-Zasshi.

a. OHTA, T. & NISHIZAKI, B., 1936.—“Experimentelle Untersuchung über den Stickstoffwechsel bei Kaninchenschistosomiasis japonica.” **48** (3), 442-463. [In Japanese: German summary pp. 442-443.]

(146a) Ohta & Nishizaki have carried out chemical investigations on the urine from rabbits experimentally infected with *Schistosoma japonicum*. They found evidence of faulty general metabolism in the increased excretion of ammonia and amino-acids, and of faulty liver metabolism in the increased excretion of purine compounds along with the presence of biliary pigment.

R.H.H.

147—Phytopathology.

- a. STEINER, G., 1936.—“The status of the nematode *Aphelenchus avenae* Bastian, 1865, as a plant parasite.” 26 (3), 294-295.
- b. COURTNEY, W. D., 1936.—“An apparent natural transfer of the bulb or stem nematode from clover to the strawberry plant.” 26 (6), 607-609.

(147a) In this brief note Steiner discusses *Aphelenchus avenae*, a species frequently found in decaying plant tissues. He considers that although it can live saprophytically it can also attack and damage healthy plant tissues and propagate in tissues not yet decayed.

T.G.

(147b) Courtney describes and figures an attack by *Anguillulina dipsaci* on “Marshall” strawberries planted on land where red clover had been badly infested with the parasite. He considers this as evidence of the transference of the parasite under natural conditions since the strawberry plants from the original source were free from infection as were also plantings of strawberries on other fields where there was no diseased clover.

T.G.

148—Proceedings of the National Academy of Sciences, India.

- a. VERMA, S. C., 1936.—“Studies on the family Bucephalidae (Gasterostomata). Part I—Descriptions of new forms from Indian fresh-water fishes.” 6 (1), 66-89.
- b. SRIVASTAVA, H. D., 1936.—“New hemiurids (Trematoda) from Indian marine fishes. Part I. A new parasite of the sub-family Prosorchinae Yamaguti, 1934.” 6 (2), 175-178.
- c. SRIVASTAVA, H. D., 1936.—“New allocreadids (Trematoda) from Indian marine fishes. Part I. New parasites of the genus *Helicometrina* Linton, 1910.” 6 (2), 179-185.

(148a) Verma describes the following new species: *Bucephalopsis fusiformis*, *B. garuai*, *B. magnum*, *B. confusus*, and *B. minimus*; *Bucephalus tridentacularia* and *B. aoria*.

E.M.S.

(148b) Srivastava describes *Prosorchis breviformis* n. sp. from *Seriolichthys bipinnulatus*, Bay of Bengal.

E.M.S.

(148c) Srivastava describes *Helicometrina septorchis* n. sp., and *H. orientalis* n. sp., from the intestine of *Sillago sihama* and *Scomber micropedator* respectively. There is a key to the four species of the genus.

E.M.S.

149—Proceedings of the United States National Museum.

- a. MACY, R. W., 1936.—“A new genus and species of trematode from the little brown bat and a key to the genera of Pleurogenetinae.” 83 (2986), 321-324.

(149a) Macy describes *Glyptoporus noctophilus* n. g., n. sp. from the intestine of *Myotis lucifugus*. The genus is assigned to the sub-family Pleurogenetinae, and a key given to separate it from other genera of the group.

E.M.S.

150—Publications of the Carnegie Institution of Washington.

a. PEARSE, A. S., 1936.—“Parasites from Yucatan.” No. 457, 45-59.

(150a) Diagnoses are given by Pearse of the parasites of 75 fishes and 5 toads collected from 11 cenotes and 2 caves in Yucatan. Of these 4 are trematodes, 6 nematodes and one a cestode. Three of the nematodes are new, viz., *Cruzia morleyi*, *Dujardinia cenotae* and *Rhabdochona kidderi*.

R.T.L.

151—Puerto Rico Journal of Public Health and Tropical Medicine.

a. KALJUS, W. A., 1936.—“On the practical value of the intradermal reaction with the trichinelliasis antigen for the diagnosis of trichinelliasis in man.” 11 (4), 768-790. [Also in Spanish pp. 791-811.]

(151a) Kaljus is of the opinion that the intradermal reaction may be used for the diagnosis of trichinosis only when considered in conjunction with other clinical appearances. Only in 74% of cases known to be infested with *Trichinella spiralis* was the result positive in his tests, while a positive reaction was occasionally obtained with non-trichinellous patients. The typical reaction does not always appear in the early or very late stages of the disease. While eosinophilia is generally associated with trichinosis, particularly in the early stages, it cannot be correlated with the degree of reaction to the intradermal test; some cases giving a strongly positive reaction when the eosinophilia was slight and vice versa.

P.A.C.

152—Quarterly Journal of Microscopical Science.

a. COLLIER, jr., V., 1936.—“Studies on the cytoplasmic components in fertilization. I. *Ascaris suilla*.” 78 (3), 397-418.

153—Queensland Agricultural Journal.

a. MANDELSON, L. F., 1936.—“The tobacco-growing industry in the United States of America.” 45 (5), 461-483.

(153a) Mandelson reports damage to tobacco in Queensland caused by the root-knot nematode and describes rotations of crops which have reduced the infections. Good results were obtained by a bare fallow for the two seasons preceding the cultivation of tobacco and by a four year rotation including cotton, corn interplanted with velvet-beans, Spanish peanuts and tobacco. Satisfactory growth has occurred following the cultivation of *Crotalaria retusa*.

M.J.T.

154—Records of the Indian Museum.

a. CHATTERJI, R. C., 1936.—“The helminths parasitic in the fresh-water turtles of Rangoon.” 38 (1), 81-94.

(154a) Chatterji has dissected two specimens each of *Emyda scutata* and *Morenia ocellata*. From the former he describes *Kaurma longicirra* n. g., n. sp., which he allocates to the Allocreadiinae, with a key to all the

genera of this group. From the same host is *Cephalogonimus burmanica* n. sp.; from *Morenia ocellata* he describes *Neopronocephalus mehri* n. sp., and *Stunkardia dilymphosa* Bhalerao, and the following nematodes: *Spironoura rangoonica* n. sp., *S. onama* Karve, and an immature female of a species of *Camallanus*.

E.M.S.

155—Reunión (Octava) de la Sociedad Argentina de Patología Regional del Norte.

- a. GAMINARA, A. & TALICE, R. V., 1936.—“El tetracloruro de carbono como antihelmíntico para las tenias del hombre.” **2**, 550-557.
- b. NIÑO, F. L., 1936.—“Algo más sobre las apendicitis verminosas y las parasitosis apendiculares.” **2**, 588-599.
- c. RUCHELLI, A. P., 1936.—“Un caso de quiste hidatídico de mama en la provincia de Catamarca.” **2**, 625-630.
- d. RAIMONDI, S., 1936.—“Caso de curación espontánea de quiste hidático del pulmón. Consideraciones clínico-radiológicas.” **2**, 631-638.
- e. MAZZA, S. & ARIAS, J. C., 1936.—“Observaciones serológicas y hemoparasitarias en conscriptos incorporados en 1932 al R/zo de Jujuy.” **2**, 686-690.
- f. MAZZA, S. & LÓPEZ, C. P., 1936.—“Frecuencia e intensidad de infecciones verminosas en apéndices extirpados quirúrgicamente en Tucumán.” **2**, 701-702.
- g. SCADUTO, P., 1936.—“Alguni animali da cortile ed i passeri quali vettori della diffusione a distanza delle uova d'*Ankylostoma duodenalis*.” **2**, 805-810.
- h. MARTINEZ, F. F. & PEREGRIN, E. S., 1936.—“Comentarios a una estadística de parasitismo intestinal.” **2**, 817-824.
- i. ANTEQUEDA, E. S., 1936.—“Algunos anoplocephalidos de los lanares determinados por primera vez en el país.” **2**, 1019-1021.

(155a) Using carbon tetrachloride in the adult dose of 3 to 4 c.c. against *Taenia saginata*, Gaminara & Talice report complete cures in 24 of 28 adults and in two of three children.

B.G.P.

(155b) Niño gives illustrated case reports of (i) verminous appendicitis due to *Oxyuris vermicularis*, (ii) normal appendicitis with *Taenia* segments in the lumen, and (iii) appendicitis with *Trichuris* eggs in the lumen.

B.G.P.

(155e) Of 359 conscripts in Jujuy, seven were infected with *Microfilaria ozzardi*. Of 87 showing eosinophilia, the faeces of 21 were examined and 10 of these were infected with helminths.

B.G.P.

(155f) Mazza & López have found *Oxyuris vermicularis* in 84 of 243 appendixes removed from adult women in Tucuman during the years 1931 to 1933. Notes on intensity of infestation of the organ with female and male worms are given.

B.G.P.

(155g) From the bibliography to his paper Scaduto has omitted references to its previous publication in two other periodicals [see Helm. Abs., Vol. III, No. 323b, Vol. IV, No. 306a].

B.G.P.

(155h) From data collected over a number of years in Spain, Martinez & Peregrin here compile a summary showing the percentage incidence of certain intestinal protozoa and helminths (excluding all tapeworms and

hookworms) which are associated with diarrhoeic colitis in adults. The data are dissected by species of parasite and by the various types of simple and multiple infection met with.

B.G.P.

(155i) For the first time in Argentine, Antequeda records and illustrates with photographs *Helictometra giardi* and *H. g. var. macilenta* from sheep slaughtered in Buenos Aires.

B.G.P.

156—Revista de Parasitología, Clínica y Laboratorio.

- a. KOURÍ, P., BASNUEVO, J. G. & ARENAS, R., 1936.—“ Contribución al conocimiento del ciclo evolutivo del *Strongyloides stercoralis*. (Nota previa).” *2* (1), 1-6. [English & French summaries 4-6.]
- b. KOURÍ, P., SELLEK, A. & RIVERA, R., 1936.—“ Sobre el tratamiento de la strongyloidosis por el violeta de genciana.” *2* (1), 7-16.
- c. PÉREZ VIGUERAS, I., 1936.—“ *Proteocephalus manjuariphilus*, n. sp. (Cestoda) parásito de *Arractosteus tristoechus* (Bloch & Schn.) (Pisces).” *2* (1), 17-18.
- d. BOLAÑOS, J. M., KOURÍ, P., ANIDO, V. & BASNUEVO, J. G., 1936.—“ El parasitismo intestinal y la clonorquiasis en los chinos retenidos en Tiscornia.” *2* (1), 39-49.
- e. CAMPODÓNICO, R. C., 1936.—“ Vermifugos cubanos.” *2* (1), 59-65.
- f. CALVÓ FONSECA, R., KOURÍ, P. & BASNUEVO, J. G., 1936.—“ Porcentaje y distribución geográfica del parasitismo intestinal en Cuba.” *2* (1), 69-74.
- g. PORTUONDO DEL PINO, A. & FERMOSELLE BACARDÍ, J. J., 1936.—“ Contribución al tratamiento de los casos graves de ankylostomosis.” *2* (1), 99-103.
- h. KOURÍ, P., BASNUEVO, J. G. & ANIDO, V., 1936.—“ Sobre el diagnóstico de la ascariasis por ascaris macho.” *2* (1), 105-109.
- i. KOURÍ, P., BASNUEVO, J. G., ALVARÉ, L. & LESCANO, O., 1936.—“ Clonorquiasis y cáncer.” *2* (2), 141-148.
- j. KOURÍ, P., BASNUEVO, J., ALVARÉ, L., LESCANO, O. & SIMÓN, R., 1936.—“ Nota previa sobre la génesis del huevo de *Fasciola hepatica*.” *2* (2), 173-174.
- k. CALVÓ FONSECA, R., KOURÍ, P. & BASNUEVO, J. G., 1936.—“ Porcentaje y distribución geográfica del parasitismo intestinal en Cuba.” *2* (2), 217-222.

(156a) Kourí, Basnuevo & Arenas find that the rhabditiform larvae of *Strongyloides stercoralis* do not always behave in the same way in cultures. After numerous generations have been passed through the parasite tends to change into an entirely free-living individual and the female becomes parthenogenetic, there being no males. The fecundity of these females decreases gradually until the cultures become sterile. The authors describe several points in the anatomy of the free-living male which have not before been noticed and study the differential features of the larvae of *Necator americanus* and *Strongyloides stercoralis* which are frequently associated in Cuba. P.A.C.

(156b) Kourí, Sellek & Rivera successfully treated 7 cases of *Strongyloides* by means of Gentian violet. Boys were given a centigram per year of age, daily for 7 to 10 days and of these only 2 needed a second series of treatments after an interval of one week. The dye was not active against *Trichocephalus*, ascarids and *Necator* which happened to be associated with *Strongyloides* in these patients.

P.A.C.

(156c) Pérez Vigueras describes *Proteocephalus manjuariphilus* n. sp., a cestode parasite of the fish *Atractosteus tristoechus*. The scolex is unarmed. There are 36 to 40 testes evenly distributed throughout the segment. Genital pores are regularly alternate and lead into a cirrus sac, extending half way across the segment. P.A.C.

(156d) Bolaños, Kourí, Anido & Basnuevo advocate parasitological examination and treatment for immigrants into Cuba. Of 200 Chinese whom they recently examined 63% were found to harbour helminths. *Ascaris lumbricoides* occurred in 47%, *Clonorchis sinensis* in 22.5%, *Trichuris trichiura* in 11.5%, *Necator americanus* in 8.5% and *Hymenolepis nana* in 0.5%. P.A.C.

(156e) Campodónico lists all the plants in Cuba from which anthelmintics can be extracted and describes the technique and use to which these can be put. P.A.C.

(156f) Fonseca, Kourí & Basnuevo find that 69.99% of the inhabitants of Caimito, Havana, carry helminth infestations. *Trichuris trichiura* occurs in 60%, being frequently associated with *Ascaris lumbricoides* (13.33%). It is also associated with *Necator* in 10% and with *Oxyuris* in 8.33% of the stools examined. P.A.C.

(156g) Portuondo del Pino & Fermoselle Bacardí consider that in grave cases of ankylostomiasis the anthelmintic should be given by duodenal tube and should be preceded by a blood transfusion. Such a technique in his opinion may be the means of saving a patient's life. P.A.C.

(156h) Kourí, Basnuevo & Anido can successfully diagnose the presence of *Ascaris* infestation by means of X-rays when by reason of the immaturity or the sex of the worms no eggs appear in the stool. P.A.C.

(156i) In a fully illustrated description of a case of clonorchiasis and cancer of the cholangio-cellular type, Kourí *et al.* conclude that the parasite was probably a primary cause of the cancer. A second case, complicated by cancer of (probably) non-parasitic origin, and two cases of simple clonorchiasis, are also described—all from Chinese in Havana. B.G.P.

(156j) From a study of numerous serial sections of adult *Fasciola hepatica*, Kourí *et al.* conclude that the egg shell originates in the aggregation and fusion of numerous granules secreted by cells of the "vitelline" glands. A fuller account is promised later. B.G.P.

(156k) Continuing their projected parasitological survey of Cuba, district by district, Fonseca, Kourí & Basnuevo here report upon 178 faecal examinations from the town of Madruga, Province of Havana. Helminths only were found in 90 cases, helminths with protozoa in 20, protozoa only in 14. *Trichuris* (100 cases) and *Ascaris* (44) were the commonest helminths, while *Necator* (8) and *Oxyuris* (3) were rare. B.G.P.

157—Science.

- a. STILES, C. W., 1936.—"Notice of possible suspension of Rules of Nomenclature in certain cases," 83 (2162), 552-553.
- b. RODRÍGUEZ-MOLINA, R. & PONS, J. A., 1936.—"The comparative effect of two iron salts on parasitic anemias in Puerto Rico," 83 (2163), 582.

(157a) On the ground that the strict application of the Rules of Nomenclature will clearly result in greater confusion than conformity a year's notice is given by the acting secretary of the International Commission on Zoological Nomenclature to enable zoologists, particularly specialists in the group in question, to present arguments for or against the suspension under consideration of certain generic names including *Anguina* Scopoli, 1777 (*Vibrio tritici*) which it is proposed to suppress. R.T.L.

(157b) From a comparative study of their effect in anaemias associated with hookworm and bilharzia infections Rodríguez-Molina & Pons conclude that solid ferrous sulphate is more easily administered and is less bothersome to the patient than a solution of ferric ammonium citrate. R.T.L.

158—Scottish Journal of Agriculture.

a. NEWBIGIN, H. F. & MORGAN, D. O., 1936.—“The effect of certain dressings on worm-infested poultry runs.” 19 (2), 162-166.

(158a) Newbigin & Morgan found that common salt, ground lime, sulphate of ammonia and sulphuric acid were not effective in destroying nematode eggs on infected poultry runs. It was also found that *Heterakis gallinæ* and *Capillaria* spp. may be acquired by fowls from runs which have been rested for eight months. D.O.M.

159—Semana Médica.

*a. IVANISSEVICH, O. & INTROZZI, A. S., 1936.—“Diagnóstico de la hidatidosis ósea.” 1, 161-166.

160—South African Medical Journal.

a. CAWSTON, F. G., 1936.—“The local application of new remedies for bilharziasis.” [Correspondence.] 10 (7), 277-278.

161—Taiwan Igakkai Zasshi.

a. KAWAI, T. & YUMOTO, Y., 1936.—“On the distribution of the encysted cercariae of *Clonorchis sinensis* (Cobbold) in the second intermediate host, *Pseudorasbora parva* (Temminck & Schlegel), and the rate of their infections to the mammalian hosts.” 35 (4), 880-887. [In Japanese : English summary p. 887.]

b. UJIIE, N., 1936.—“On the identification of certain worms of the trematode genus *Monorchotrema* occurring in Formosa.” 35 (4), 938-945. [In Japanese : English summary p. 946.]

c. UJIIE, N., 1936.—“On the structure and function of Mehlis' gland on the formation of the egg-shell of *Echinocasmus japonicus*.” 35 (5), 1000-1009. [In Japanese : English summary p. 1010.]

* Original not available for checking or for review.

(161a) The number of encysted cercariae of *Clonorchis sinensis* in *Pseudorasbora parva* averaged 1,939 per fish and 316.3 per gram of body weight. Of these 47.42% occurred in the flesh, 26.6% in the head, 16.83% under the dermal layers, 3.25% in the gills, 5.18% in the fins and 0.74% on the scales. Fish preserved on ice from 5 to 10 days infected cats in 58%, dogs in 41.17% and rabbits in 23.76%, but these percentages gradually decreased with the number of days which lapsed after the fish were caught.

R.T.L.

(161b) In an English summary Ujiie tells us that fresh water fishes and the brackish water mullet are the second intermediate hosts of *Monorchotrema taihoku* and *M. taichui*. Animals fed with metacercariae from mullet developed these two species and also *M. yokogawai*. The best criterion for differentiation of the three species is found to be the peculiarities of the "genital-ventral-sucker apparatus".

E.M.S.

162—Technical Bulletin. United States Department of Agriculture.

a. CRAM, E. B., 1936.—"Species of Capillaria parasitic in the upper digestive tract of birds." No. 516, 27 pp.

(162a) The capillarid worms found by Cram in the oesophagus and crop of galliform and anseriform hosts in the United States are referred to the species *Capillaria annulata* and *C. contorta*. Full descriptions of these two species are given and life-history studies on *C. contorta* showed that the eggs in culture appeared to be fully embryonated in 27 to 40 days and that complete development in the bird host occurred in 45 to 54 days.

A morphological description is given of each of 9 other species recorded from the same habitat in birds and it is pointed out that two of these, viz., *C. lophortygis* and *C. perforans* cannot be satisfactorily differentiated from *C. contorta*.

D.O.M.

163—Tierärztliche Rundschau.

a. MATOFF, K., 1936.—"Bei Tauben auf enteralem Wege erzeugte Muskeltrichinellose." 42 (21), 401-404.
 b. ENIGK, K., 1936.—"Zur Behandlung der Blinddarm-Leberentzündung der Hühnervögel (Blackhead)." 42 (21), 406-407.

(163a) Matoff finds that young pigeons are susceptible to muscular trichinosis when fed trichinosed meat by the mouth. In older birds after such feeding, adults develop in the intestine but muscular invasion does not take place. Hence the resistance in pigeons to trichinosis is not absolute but there is some degree of age immunity.

P.A.C.

(163b) Enigk is of the opinion that blackhead of gallinaceous birds is caused by a gemmiparous fungus and not by a protozoan as is the general opinion. By feeding spores of this fungus together with eggs of *Heterakis gallinae* he was able to induce the disease in hen turkeys, and was later able

to effect a cure by means of Lugol's iodine. Very satisfactory results, in preventing the parasite from setting up an infection, were obtained when the iodine was given before the time of experimental feeding. P.A.C.

164—Tijdschrift voor Diergeneeskunde.

a. GRAAF, C. DE, 1936.—“Een en ander over de cysticercosis bij het schaap.” 63 (10), 547-556. [English summary p. 556.]

(164a) The author reviews the literature on *C. ovis* and concludes that the occurrence of *C. cellulosae* in sheep has not been definitely established nor disproved. In Holland *C. cellulosae* practically does not occur but *C. ovis* is not infrequent and therefore not identical with *C. cellulosae*. Measly sheep carcasses are passed for human consumption. H.M.

165—Transactions of the American Microscopical Society.

a. HART, J. F. & GUBERLET, J. E., 1936.—“Cestoda from fishes of Puget Sound. I. Spathebothriidea, a new superfamily.” 55 (2), 199-207.
 b. ACKERT, J. E., 1936.—“*Physaloptera felidis* n. sp., a nematode of the cat.” 55 (2), 250-254.

(165a) Hart & Guberlet describe *Spathebothrium simplex* Linton from *Liparis fucensis*, a peculiar cestode characterized by the complete lack of any scolex, by the absence of external segmentation, and by the irregular alternation of its medial genital pores on both flat surfaces. Consideration of these unusual features prompts removal of the form from the Pseudophyllidea to a new superfamily, the Spathebothriidea. E.M.S.

(165b) Ackert describes *Physaloptera felidis* n. sp. occurring in the stomach and duodenum of *Felis domestica* at Manhattan, Kansas and also records this as being the first record of *Physaloptera* in domestic cats in N. America. The specific differences of this parasite compared with *P. gemina*, *P. praeputialis*, *P. pacitae*, *P. maxillaris* and *P. malayensis* are based on the forward position of the vulva which is anterior to the base of the oesophagus, the absence of a preputial fold, the size of the spicules, and the number and arrangement of the bursal papillae. J.W.G.L.

166—Transactions of the Royal Society of Tropical Medicine and Hygiene.

a. O'CONNOR, F. W., 1936.—“I. Tracings of the movements of sheathed embryos of *Wuchereria bancrofti* in heparinized blood on microscope slides at room temperature, St. Croix, Virgin Islands, U.S.A., 13th January, 1936. II. Microfilariae in the blood of the ground dove of St. Croix, Virgin Islands.” [Demonstration.] 30 (1), 6.
 b. MacHATTIE, C., 1936.—“A preliminary note on the life history of *Schistosoma turkestanicum* Skrjabin, 1913.” 30 (1), 115-124.
 c. O'CONNOR, F. W. & BEATTY, H., 1936.—“The early migrations of *Wuchereria bancrofti* in *Culex fatigans*.” 30 (1), 125-127.

(166b) *Ornithobilharzia turkestanicum* occurs in almost every sheep and goat in the Amarah Marsh-Arab and rice field areas in Iraq. Other domesticated animals infected in Iraq include cattle, water buffaloes, camels, horses, donkeys and mules. In the waters used by infected sheep and goats *Lymnaea tenera euphratica* Mousson was the most prevalent snail. This snail is naturally infected with two cercariae one an aphygryngeal longifurcate distome, the other an aphygryngeal brevifurcate distome. That the latter is the infective stage of *O. turkestanicum* was proved experimentally. *Schistosoma haematobium* and *S. bovis* cercariae occurred naturally in local *Bulinus truncatus* around Baghdad.

R.T.L.

(166c) The exsheathed larvae of *Filaria bancrofti* appear in increasing numbers at the anterior end of the stomach of *Culex fatigans* 10 hours after feeding and shortly afterwards enter the narrow anterior part of the midgut occupying the whole length of the viscus as far as the oesophageal valve or proventriculus. They pierce the wall and thus have a more direct access to the thoracic muscles than by penetration of the stomach wall. Some larvae are seen outside the stomach wall in the abdominal cavity within 45 minutes of feeding but in less numbers.

R.T.L.

167—Veterinarski Arhiv.

a. DAVOR, M., 1936.—“Parazitički nematodi u debelom crijevu naših konja.” 6 (1), 43-68. [English summary p. 68.]

(167a) Davor reports on the nematodes found in the large intestine of 27 horses which died or were slaughtered in Zagreb. There are brief notes on each of the 31 species found.

B.G.P.

168—Veterinary Record.

a. STEWART, W. L., 1936.—“Some diseases of sheep.” 48 (24), 753-757.

(168a) In the course of an address on diseases of sheep, Stewart touches upon parasitic diseases due to Trichostrongylidae and methods of dosing sheep with copper sulphate.

B.G.P.

169—Zeitschrift für Fleisch- und Milchhygiene.

a. STENGEL, P., 1936.—“Erfolg der planmässigen Nachforschung nach Bandwurmträgern im Anschluss an die Feststellung der gesundheitsschädlichen Finne beim Rinde.” 46 (14), 274.

b. STROH, G., 1936.—“Trichinose beim Fuchs der freien Wildbahn.” 46 (15), 293-294.

c. GMELIN, W., 1936.—“Zur Entstehungs- und Entwicklungsgeschichte der Fleischbeschaugesetzgebung.” 46 (16), 317-321.

(169a) In Würtemberg, Stengel has recovered 61 *Taenia saginata* during the years 1932 to 1935 by offering a reward of 10 RM for each scolex. The editor urges other veterinary officers to follow the same plan, so that *Cysticercus bovis* (and incidentally *T. saginata*) may be eradicated from Germany by a mass campaign. B.G.P.

(169b) Stroh reviews the records of trichinosis in wild foxes, published since 1919, and shows that they are remarkably numerous, especially for foxes from South Germany. Around Würtemberg the incidence is much higher in foxes than in pigs or dogs, and Stroh suggests that field-mice may prove to be the source of infection. B.G.P.

(169c) In a brief survey Gmelin recounts the origin and historical development of the law relating to meat inspection in Germany. A copy of the first effective "Rules," dated 1567, still exists, and includes regulations directed against cysticercosis. Infected meat could, however, be sold in the pig market, as "tainted," at 1 pfennig a pound cheaper. In the course of the survey mention is made of Joh. Peter Frank of Baden who in 1783 introduced the new idea that the meat of sick animals is not necessarily harmful. [One extraordinary statement is made: that Kuchenmeister fed cysticerci to pigs and obtained adult taenias in the intestine!] B.G.P.

170—Zeitschrift für Infektionskrankheiten, Parasitäre Krankheiten und Hygiene der Haustiere.

a. SCHMID, F., 1936.—"Zur Frage der Immunität bei parasitären Krankheiten und ihrer Bedeutung für die Bekämpfung." **49** (3), 177-207.

(170a) After discussing various types of resistance, either to infection or to disease by parasitic protozoa and helminths, Schmid deals with a number of instances and concludes that there is not yet clear evidence of true immunity to reinfection or to superinfection. Apparent exceptions may be explained in other ways such as the local irritation of tissues by present parasites which may militate against superinfection. Miller's experiments, claiming to establish passive acquired immunity to a tapeworm larva, require confirmation. So-called "age resistance" and resistance to disease undoubtedly do occur; but helminthic immunity, as understood at present, does not lend itself to application as a method of control. The presence of "immune bodies," so valuable for diagnosis, does not necessarily imply that the host is displaying any immunity either to infection or to disease. B.G.P.

171—Zeitschrift für Parasitenkunde.

a. MATTES, O., 1936.—"Der Entwicklungsgang des Lanzettengels *Dicrocoelium lanceatum*." **8** (4), 371-430.

b. NEUHAUS, W., 1936.—"Untersuchungen über Bau und Entwicklung der Lanzettengel-Cercarie (*Cercaria vitrina*) und Klarstellung des Infektionsvorganges beim Endwirt." **8** (4), 431-473.

c. MATOFF, K., 1936.—"Beobachtungen über die larvale Entwicklung von *Strongyloides papilliferus* (Wedl, 1856) und Infektionsversuche mit filariformen Larven." **8** (4), 474-491.

(171a & b) These two papers, although published separately for a technical reason (that by Neuhaus is a thesis), must be abstracted together since they claim between them to have elucidated the life cycle of *Dicrocoelium dendriticum* in full detail, apart from the migration from intestine to liver in the definitive host.

Mattes' paper, which is fully illustrated, describes the artificial infection of *Helicella ericetorum*, *H. candidula* and *Zebrina detrita* by feeding fluke eggs to them. Miracidia hatch in the mollusc's fore-gut, migrate to the mesenteric gland and grow into polymorphous, non-motile sporocysts lacking a distinct cuticle. Within these develops a second generation of sporocysts, but elongate, motile, having a distinct cuticle and a terminal birth-pore. The third generation is of cercariae morphologically identical with *C. vitrina*. There are records of experiments with other molluscs, and a long discussion of previous work on the final stages of the life-cycle.

Neuhaus opens with a full re-description of *C. vitrina* and its development within the daughter-sporocysts. The cercariae emerge from the latter and actively attain the snail's respiratory cavity only when damp weather succeeds a period of dryness. Here, 200 to 400 of them form a collective cyst, each cercaria retaining its tail and stylet. Other collective cysts are then formed, all of them cohering into a mass like a bunch of grapes. This mass is then ejected from the respiratory pore, as the snail crawls about, and being sticky adheres to vegetation or to whatever surface the snail is on. A sheep was infected with these collective cysts, eggs first appeared about 5 months after the first infection, as found by Cameron (1931), and 15,000 flukes were recovered post mortem. The duration of the intra-molluscan phase is simply stated by Mattes to be very variable.

B.G.P.

(171c) With the aid of microphotographs, Matoff discusses the succession of larval stages in the direct and indirect life-cycles of *Strongyloides papillosum*, both of which types he has found to occur. As in the case of *S. stercoralis*, the "direct" filariform larva is the third larval stage, and the "indirect" sexual adults are also preceded by two rhabditiform stages. The rhabditiform larvae of the two types of life-cycle are, however, morphologically distinguishable within a few hours of hatching. Free living adults produce larvae which develop through two rhabditiform stages to the filariform stage, exactly as in the case of the larvae of the direct cycle. Matoff concludes that the percutaneous infection route is the usual one, at least in his experiments using rabbits.

B.G.P.

172—Zeitschrift für Zellforschung und Mikroskopische Anatomie.

a. MINOUCHI, O., 1936.—"Cytologische Studien über das Ei von *Polystomum integrinum* von der Eiablage bis zu den frühen Furchungsstadien." 24 (1), 85-127.

173—Zentralblatt für Bakteriologie. Abteilung I. Originale.

- a. TRAWIŃSKI, A., 1936.—“Ueber Anwendung der Präzipitationsreaktion zum Nachweis der Schweinezystizerkose.” **136** (1/2), 116-120.
- b. ROTH, H., 1936.—“Ueber das Vorkommen pränataler Trichinenübertragung bei künstlich infizierten Meerschweinchen.” **136** (5/6), 278-284.

(173a) Trawiński has found the precipitin reaction valuable for the diagnosis of *Cysticercus cellulosae* in pigs. He was able to demonstrate precipitins both in sera and in muscle, extracted with physiological saline, from infested animals. His antigen was prepared from scolices successively isolated from the cysticercus, washed, dried, pulverized, extracted with physiological saline, heated at 56°C. for half an hour, refrigerated for 8 days and filtered. Of 25 infected pigs, the sera gave positive reactions in 22 using specific antigen, and in 8 using *C. pisiformis* antigen; 30 control sera from uninjected pigs were negative. Of 26 infected pigs the muscle extracts gave positive reactions in 21 using specific antigen and in 4 using *C. pisiformis* antigen; 50 control extracts were negative. In both series, antigens prepared from ascaris, hydatid and trichinella were consistently negative.

B.G.P.

(173b) Investigating the occurrence of prenatal Trichinella infections in guinea-pigs, Roth found that out of 22 new-born or foetal guinea-pigs, from 10 mothers infected with Trichinella during gestation, nine were infected; one had 126 larvae, and the other eight had 19 or less. One placenta in 12 was lightly infected. In the guinea-pig, as in man, there is only a single barrier (the embryonic chorion) separating maternal and foetal circulations.

B.G.P.

174—Zoologischer Anzeiger.

- a. FILIPJEV, I. N., 1936.—“Über *Cryptonchus Cobb 1913*. Miscellanea nematologica III.” **114** (3/4), 105-106.

(174a) Filipjev briefly discusses the systematic position of *Cylindrolaimus tristis* Ditlevsen 1911, for which Micoletzky created the genus *Ditlevensia* in 1925, and shows that it should be placed in the genus *Cryptonchus* Cobb, 1913 as *Cryptonchus tristis*.

T.G.

NON-PERIODICAL LITERATURE.

- 175—MACIEL, H., 1936.—“Helminhos e helminthoses do homem, no Brasil.” Rio de Janeiro, 404 pp.

This very useful memoir by Maciel gives an up-to-date account of the various helminths which occur in man in Brazil. It is supplemented by a chapter on helminth campaigns and concludes with a valuable bibliography

of Brazilian literature of medical helminthology in which the publications are arranged under the year of issue. Maciel recalls that Travassos has estimated that over 120 species of helminths are pathogenic in Brazilian domesticated animals.

R.T.L.

176—SCHUURMANS STEKHOVEN, jr., J. H., 1936.—“Dr. H. G. Bronns Klassen und Ordnungen des Tierreichs. Nematodes.” 3. & 4. Lieferungen, Leipzig, pp. 65-364.

In these two sections, consisting entirely of references, Schuurmans Stekhoven completes that part of Bronns “Klassen” (Vol. 4, Part II, Book 3, dealing with nematodes) which was begun by Jägerskiöld. The latter had planned to issue the references in broad chronological periods, and had in fact issued 450 references, themselves in chronological order, under two main periods. The present sections cover the three periods: (i) Leuckart & Schneider to Looss & Noé (1900), refs. 564-1,763; (ii) up to Filipjev & Micoletzky (1921), refs. 1,764-4,000; and (iii) up to 1935, refs. 4,001-8,439, but in each of these the authors' names are arranged alphabetically. B.G.P.